ABSTRACT

An automated transport system for use in a material handling system. The automated transport system employs a distributed control system including a top level controller (transport controller), a plurality of second-level controllers (control logic computers) and a plurality of third-level controllers (intelligent drivers). The transport controller (TC) receives material commands from a conventional material control system (MCS). The TC breaks the command into sub-commands directing selected control logic computers (CLCs) to acquire, move to a destination or otherwise interact with a particular container designated by the MCS command. The transport controller selects the CLCs based on the transport system topology, the content of the MCS command and knowledge of which regions of the transport system are controlled by respective CLCs. Each CLC implements the sub-commands by issuing to the intelligent drivers low level control commands to accelerate, elevate, rotate, load or unload the container. Each intelligent driver directly controls one of the electromechanical devices that compose the transport system hardware in accordance with these low level commands. The electromechanical devices can include rail sections (zones), directors, elevators, load port transfer devices and tag readers.